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Persian Clover

—A LEGUME FOR THE SOUTH

LEAFLET NO. 484

Persian Clover

—A LEGUME FOR THE SOUTH

Prepared by Crops Research Division,
Agricultural Research Service.

Persian clover is a winter annual legume native to southern Asia Minor and the Mediterranean countries. It is adapted to the southern United States, where it is used primarily for pasture and hay.

It produces forage in late winter and early spring, when southern grasses are dormant. It is nutritious and is liked by all kinds of livestock and poultry.

When it is grown with grasses, Persian clover improves the quality and quantity of the grasses by furnishing nitrogen. Once established in properly managed plantings, it reseeds itself year after year.

In some areas, Persian clover is used for green manure or for silage as well as for pasture and hay.

WHERE IT GROWS

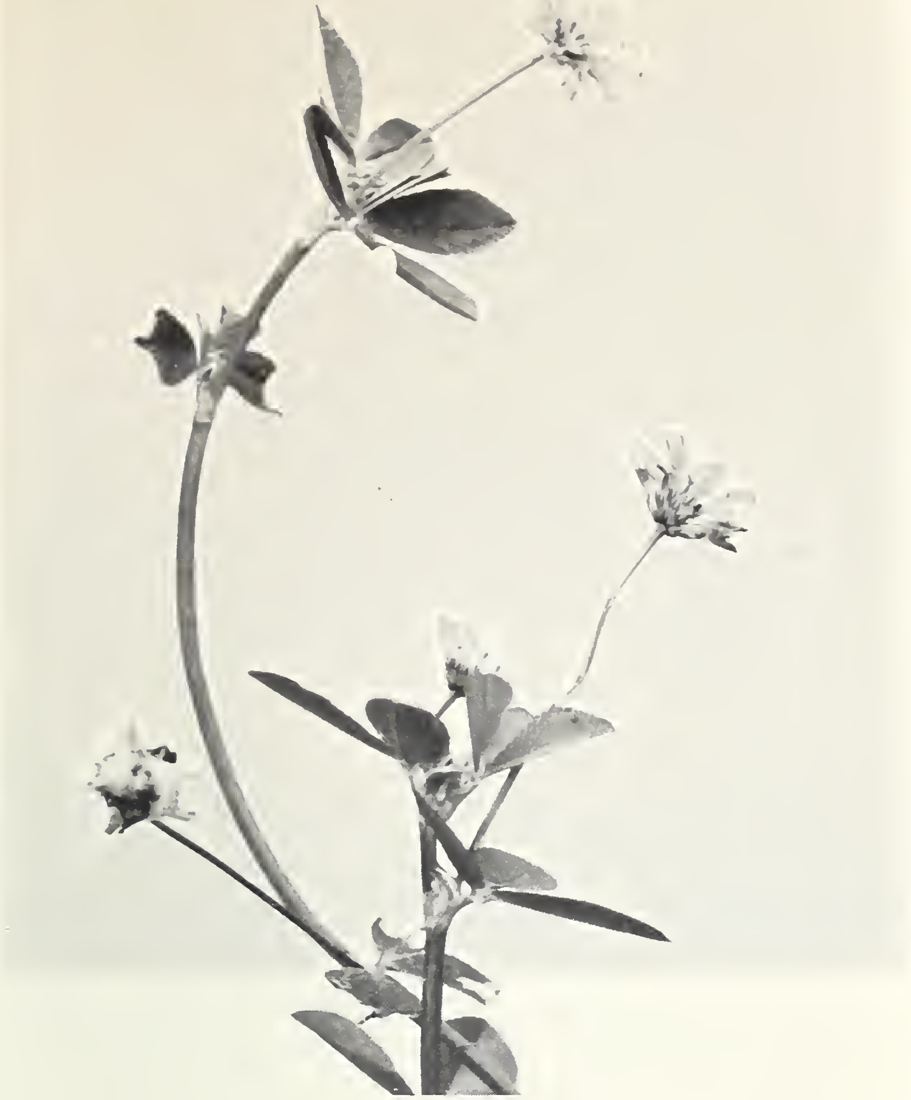
Persian clover is adapted to the southern United States as far north as Tennessee. It also grows well in some areas on the Pacific coast. It is not hardy in the North; there, the plants make only a short growth and fail to reproduce.

Heavy, moist soils in low-lying areas are best suited for Persian clover. It does not do well on upland sandy soils.

HOW IT GROWS

Persian clover is a true winter annual; the seed germinates in the fall and the plant grows throughout the winter in the form of a low rosette. In spring, it grows rapidly and develops many slender, upright flower stems. It produces seed in late spring, then dies.

Under ideal conditions, the plant grows to a height of 3 feet. Normally, the stems are upright; they do not creep on the soil as white clover stems do. When the stand is thin or heavily grazed, however, the stems may lie along the ground.



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Flower heads and, at lower left, mature seed head of Persian clover.

Light-purple flowers are borne in the leaf axils on stems from ½ to 2 inches long. During the early-bloom stage, the flowers form a head that is somewhat flat. They are self-pollinating and self-fertile.

As the seed matures, the seed envelope becomes inflated and looks like a tiny balloon. These envelopes break off when the seed is mature. They may be spread by water or by the wind.

The seed usually is olive green or blackish purple. However, some seed is yellow or reddish brown. It is only slightly larger than white clover seed; the two are difficult to separate.

CULTURE

Preparing the Seedbed

Persian clover usually is seeded on a grass turf. The best stands are obtained on bermudagrass or dallisgrass turfs, but good stands also have been obtained on carpetgrass and bahiagrass.

To prepare turfs of bermudagrass or dallisgrass for seeding Persian clover, either clip the grass closely or let livestock graze it closely.

Carpetgrass and bahiagrass turfs are dense; they are more difficult to prepare for seeding with Persian clover. To prepare them disk thoroughly, even to the extent of turning over slices of turf.

Persian clover also can be seeded successfully on cultivated land. A firm seedbed is essential. Before seeding, firm the soil by rolling or dragging.

Soil between cotton or corn rows is likely to be compacted or crusted. If it is, loosen the surface slightly before seeding Persian clover.

Liming and Fertilizing

For help in determining the lime and fertilizer needs of your Persian clover stand, consult your county agricultural agent or your State agricultural experimental station.

Persian clover does best on alkaline soil. It can be grown on soils of medium acidity, but it is most productive on soils that are above pH 6. For best results on acid soils, apply 1 to 2 tons per acre of finely ground limestone in midsummer.

For successful growth, Persian clover needs mineral fertilizers. Soils throughout the South are deficient in phosphates and some soils in the region are deficient in potash.

Recommendations for phosphate application usually are in the range of 200 to 500 pounds of superphosphate, or its equivalent, at seeding time. This is followed by supplemental applications of 100 to 300 pounds per acre every year or two.

Annual applications of 100 to 200 pounds of muriate of potash per acre may be necessary.

The fertilizers may be applied by broadcasting or by drilling. For large areas, concentrated fertilizers can be applied by airplanes.

Inoculating

For productive stands, Persian clover seed must be inoculated. Use commercial cultures to inoculate the seed. Follow the directions on the package.

If the weather remains hot and dry for more than a few days after the field has been seeded, apply more inoculating culture to the soil. Wait until rainy weather occurs. Then make a broadcast application of culture mixed with sand. Use a bushel-size package of culture in 50 to 200 pounds of sand for each acre.

Volunteer stands may be uninoculated the second year even though the first year's stand was well inoculated. This is more frequent when the clover is used as a green-manure crop than when it is seeded with grasses.

For seeding green-manure crops, use inoculated seed every year.

For seeding clover on grass turfs, use inoculated seed the first two years. After the second year, further inoculation on grass turfs is unnecessary.

Seeding

Seed Persian clover in the fall. The best time is at the beginning of fall rains.

Broadcast 5 to 8 pounds of seed per acre. This usually is enough to produce a good stand, but if fall weather is hot and dry, the first year's stand may be thin. The second year's stand should be thick, however, if the stand has been managed properly.

If your field varies in fertility from place to place and contains both upland and lowland soil, use a mixture of equal quantities of Persian clover, hop clover, and white clover. Do not use a mixture of Persian clover and lespedeza; Persian clover grows most vigorously when lespedeza is starting and it crowds out the lespedeza.

ALA D1–69

Black Angus cattle grazing on a mixed pasture of Persian and white clovers.

Airplanes have been used to seed Persian clover on large acreages of rice from mid-October to December. The Persian clover seed is spread on standing rice at the last draining or on stubble.

USES

Pasture

Persian clover is an excellent grazing plant. It produces a high-quality protein forage from late winter to late spring.

If good stands are established in early fall, the clover can be grazed lightly in the winter.

During March, April, and early May, the clover makes its greatest growth. It can be grazed more heavily then. During this period, a carrying capacity of two cows per acre is not unusual on bottom lands.

Graze Persian clover moderately in late spring. If the clover is grazed heavily, it is killed before it can set seed. If it is grazed too lightly, it crowds summer grasses and retards their growth. After the clover dies, the retarded grasses furnish poor grazing until they recover from crowding.

Persian clover cannot withstand continued close grazing as well as white clover. Where the two species are present in mixed stands, continued close grazing results in a decrease in Persian clover and an increase in white clover.

Be careful of bloat in cattle and sheep grazing Persian clover. To reduce danger of bloat—

- Begin grazing the animals early and keep them on clover as long as it is available.
- Include grasses in mixture with the clover.
- Give the animals access to strawstacks or haystacks.

Hay

Persian clover hay, if properly cured, is nutritious and is well liked by livestock. Stands of Persian clover generally yield 1 to 2 tons of hay per acre.

The clover should be cut for hay when it is between one-quarter bloom and full bloom.

The highest quality hay is from plants cut at the one-quarter bloom stage of growth. When the crop is cut at this stage, the regrowth has time to set seed.

The largest yield of hay is from plants cut in the full-bloom stage. When the crop is cut at full bloom, the regrowth will not produce seed. The equivalent of U.S. No. 1 clover hay can be made from plants cut at full bloom if the hay is cured properly.

Persian clover has a high moisture content, but the stems are fine and the plants are fairly easy to cure.

After mowing the clover, let it wilt in the swath and then windrow it for final curing.

Silage

Silage from Persian clover is an excellent feed for beef and dairy cattle. For maximum yields, clover should be ensiled when it is slightly past full-bloom stage. Though preservatives are not necessary for high-quality silage, they should be used to reduce objectionable odors and fermentation losses.

Green Manure

Persian clover green-manure crops yield as much as 30,000 pounds of green material per acre. The green-manure crop can be grazed lightly early in the season, or a seed crop can be harvested before turning under the green manure.

If Persian clover is allowed to approach maturity before it is turned under, it yields a maximum of green material and sets enough seed to replenish itself for 2 years.

The soil-improving value of Persian clover is not materially reduced if only the straw is turned under. A seed crop can be harvested before the crop is turned under and enough seed will shatter to provide a thick stand of clover in the fall.

When the green-manure crop is allowed to set seed before it is turned under, it should be followed with late-planted corn or sorghum. Other summer-growing crops do not have time to mature when planted so late in the season.

Seed Production

Persian clover is a prolific seed producer. Under ideal conditions, yields of 600 pounds of seed per acre are possible, but yields of 150 to 300 pounds are more common.

The same crop can be used for both grazing and seed production. To use it for both purposes, graze the clover closely until about 4 weeks before the clover normally blooms. Then remove the animals and let the clover bloom and form seed heads.

Cut the seed crop when most of the seed capsules have turned light brown. Normally, the mower should be equipped with lifter guards. But for thick stands, particularly if they are lodged and tangled, use a short, heavy weed bar without guards.

For best results, cure the seed in the windrow. Roll the heads to the inside of the windrow to reduce shattering.

Thresh with a combine equipped with a pickup attachment. Do not combine direct.

Dry the seed immediately after harvesting. For faster drying, rough clean the seed to remove pieces of stems and leaves. Dry the seed artificially, or spread it thinly under cover and turn it every few days until it is dry.

Shattering

Persian clover seed shatters easily. This sometimes makes the seed crop difficult to save. When the seed is mature, a heavy rain can break the capsules off of the heads and cause a complete loss. To reduce losses from shattering, harvest the seed crop as soon as it is ready.

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